

WHAT IS CLAIMED IS:

1. An apparatus for controlling the position of a screen pointer, the apparatus comprising:
 - a movement sensor for sensing relative movement between the apparatus and a surface, and generating corresponding movement data, the movement sensor configured to generate compressed data representing the movement data;
 - and
 - a wireless transmitter for wirelessly transmitting the compressed data.
2. The apparatus of claim 1, wherein the apparatus is a wireless mouse.
3. The apparatus of claim 1, and further comprising:
 - a light source for illuminating the surface, thereby generating reflected images, and wherein the movement sensor is configured to generate digital images based on the reflected images, and generate the movement data based on a correlation of successive ones of the digital images.
4. The apparatus of claim 1, wherein the compressed data comprises a magnitude value representing a magnitude of movement, and an angle value representing an angle of movement.
5. The apparatus of claim 4, wherein the magnitude and angle values are compressed based on a compression algorithm.
6. The apparatus of claim 1, wherein the compressed data comprises acceleration data indicative of an acceleration between the apparatus and the surface.
7. The apparatus of claim 6, wherein the acceleration data is compressed based on a compression algorithm.

8. The apparatus of claim 6, wherein the apparatus is configured to selectively wirelessly transmit the acceleration data or velocity data.
9. The apparatus of claim 1, wherein the movement sensor is configured to generate the compressed data based on a compression algorithm.
10. The apparatus of claim 9, wherein the compression algorithm is a logarithm-based compression algorithm.
11. The apparatus of claim 9, wherein the movement sensor is configured to identify a difference between the movement data and the compressed data for a current reporting period, and adjust the movement data for a subsequent reporting period based on the identified difference.
12. The apparatus of claim 1, wherein the compressed data includes a total number of bits that varies based on a magnitude of the relative movement.
13. The apparatus of claim 1, and further comprising a lookup table for storing compressed data values, wherein each compressed data value represents a two dimensional movement.
14. The apparatus of claim 1, wherein the apparatus is configured to wirelessly transmit the compressed data at irregular intervals.
15. The apparatus of claim 14, wherein the apparatus is configured to wirelessly transmit the compressed data only when there has been a change in movement since a previous motion report.
16. The apparatus of claim 1, wherein the apparatus is configured to wirelessly transmit button press information at irregular intervals.

17. The apparatus of claim 1, wherein the apparatus is configured to wirelessly transmit button press information only when the apparatus senses that a button on the apparatus has been pushed by a user.

18. The apparatus of claim 1, wherein the apparatus is configured to wirelessly transmit button press information using a lesser number of bits than there are buttons on the apparatus that are represented by the button press information.

19. A method of generating movement data with a wireless pointing device, the method comprising:

- sensing relative movement between the device and a surface, and generating corresponding movement data;
- generating a compressed representation of the movement data; and
- wirelessly transmitting the compressed representation.

20. A navigation sensor for generating movement data to control the position of a screen pointer, the navigation sensor comprising:

- a sensor array configured to sense reflected images from an imaging surface;
- an analog to digital converter for generating digital images based on outputs of the sensor array;
- a processor for generating movement data based on the digital images, and compressing the movement data to generate compressed data; and
- an interface for outputting the compressed data.